Attorney Docket No.: 10491-7
Serial No. 09/884,522

AMENDMENTS TO CLAIMS

In accordance with 37 C.F.R. § 1.121, please amend the pending claims of the same number according to the following annotated version of all claims.

1. (Currently amended) A system for transmitting images over a single filament of a fiber optic cable, comprising:

a first lens system for producing a substantially-reduced image of an object; and

a second lens system for producing a visibly-presentable image of said object from said substantially-reduced image, said second lens system being optically coupled with said first lens system via said single filament of said fiber optic cable and being adapted to receive said substantially-reduced image from said first lens system via said single filament.

2. (Original) The system of claim 1, wherein said first lens system is optically coupled with said filament substantially adjacent to a proximal end region of said fiber optic cable, and said second lens system is optically coupled with said filament substantially adjacent to a distal end region of said fiber optic cable.

3. (Original) The system of claim 1, wherein said first lens system comprises an optical portion of a camera.

4. (Original) The system of claim 1, wherein said first lens system includes an inverted microscope objective, said first lens system being optically coupled with said filament via said inverted microscope objective, said inverted microscope objective being adapted to produce said substantially-reduced image from an initial image generated by said first lens system.

5. (Original) The system of claim 4, wherein said inverted microscope objective is disposed substantially within said first lens system.

6. (Original) The system of claim 4, wherein said substantially-reduced image has a size that is substantially between one-thousandth and one-millionth of a size of said initial image.

7. (Original) The system of claim 1, wherein said first lens system is optically coupled with said filament via a collimating and focusing system.

8. (Original) The system of claim 1, wherein said second lens system comprises an optical portion of a projector.

9. (Original) The system of claim 1, wherein said second lens system includes a microscope objective, said second lens system being optically coupled with said filament via said microscope objective, said microscope objective being adapted to produce a restored image from said substantially reduced image.

10. (Original) The system of claim 9, wherein said microscope objective is disposed substantially within said second lens system.

11. (Original) The system of claim 9, wherein said restored image has a size that is substantially between one thousand and one million times of a size of said substantially-reduced image.

12. (Original) The system of claim 1, wherein said second lens system is optically coupled with said filament via a collimating and focusing system.

13. (Original) The system of claim 1, wherein said second lens system is adapted to visibly present said visibly-presentable image.

14. (Original) The system of claim 13, wherein said visibly-presentable image is visibly presented by being projected onto a viewing screen.

15. (Original) The system of claim 13, wherein said visibly-presentable image is visibly presented substantially adjacent to an image surface of said second lens system.

16. (Currently amended) A system for transmitting images over a single filament of a fiber optic cable, comprising:

a camera, said camera being coupled with a proximal end region of said fiber optic cable and having a lens system for receiving light from an object, said lens system being in optical communication with said single filament and being adapted to produce a substantially-reduced image of said object; and

a display system, said display system being coupled with a distal end region of said fiber optic cable and having a lens system, said lens system of said display system being in optical communication with said lens system of said camera via said single filament and being adapted to produce a visibly-presentable image from said substantially-reduced image, said display system being capable of visibly presenting said visibly-presentable image.

17. (Original) The system of claim 16, wherein said camera includes an inverted microscope objective, said lens system of said camera being optically coupled with said filament via said inverted microscope objective, said inverted microscope objective being adapted to produce said substantially-reduced image from an initial image generated by said lens system of said camera.

18. (Original) The system of claim 17, wherein said substantially-reduced image has a size that is substantially between one-thousandth and one-millionth of a size of said initial image.

19. (Original) The system of claim 16, wherein said display system includes a microscope objective, said lens system of said display system being optically coupled with said filament via said microscope objective, said microscope objective being adapted to produce a restored image from said substantially reduced image.

20. (Original) The system of claim 19, wherein said restored image has a size that is substantially between one thousand and one million times of a size of said substantially-reduced image.

21. (Original) A system for transmitting images over a filament of a fiber optic cable, comprising:

a first lens system for producing an initial image of an object, said first lens system comprising an optical portion of a camera;

an inverted microscope objective for producing a substantially-reduced image from said initial image, said inverted microscope objective being optically coupled with said first lens system and being adapted to receive said initial image from said first lens system, said substantially-reduced image having a size that is substantially between one-thousandth and one-millionth of a size of said initial image;

a first collimating and focusing system for collimating and focusing said substantially-reduced image, said first collimating and focusing system being optically coupled with said inverted microscope objective and being adapted to receive said substantially-reduced image from said inverted microscope objective;

a first optical coupler for optically coupling said first collimating and focusing system with said filament at a proximal end region of said fiber optic cable, said first optical coupler being adapted to receive said substantially-reduced image from said first

collimating and focusing system and being capable of communicating said substantially-reduced image to said filament;

a second optical coupler, said second optical coupler being optically coupled with said filament at a distal end region of said fiber optic cable and being adapted to receive said substantially-reduced image from said first optical coupler via said filament;

a second collimating and focusing system for collimating and focusing said substantially-reduced image, said second collimating and focusing system being optically coupled with said second optical coupler and being adapted to receive said substantially-reduced image from said second optical coupler;

a microscope objective for producing a restored image from said substantially-reduced image, said microscope objective being optically coupled with said second collimating and focusing system and being adapted to receive said substantially-reduced image from said second collimating and focusing system, said restored image having a size that is substantially between one thousand and one million times of said size of said substantially-reduced image; and

a second lens system for producing a visibly-presentable image from said restored image, said second lens system comprising an optical portion of a projector, being optically coupled with said microscope objective, being adapted to receive said restored image from said microscope objective, and being capable of visibly presenting said visibly-presentable image.

22. (Currently amended) A system for transmitting images over a fiber optic cable having a plurality of filaments, each filament for transmitting a whole image, comprising:

a first plurality of lens systems each for producing a substantially-reduced image of an object, said first plurality of lens systems each being adapted to produce a substantially-reduced image of said object; and

a second plurality of lens systems each for producing a visibly-presentable image of said object, said second plurality of lens systems each being optically coupled with at least one of said first plurality of lens systems via at least one of said plurality of filaments, each filament for transmitting a whole image, and each of said second plurality of lens systems being adapted to receive said substantially-reduced image from said at

least one of said first plurality of lens systems via said at least one of said plurality of filaments.

23. (Original) The system of claim 22 wherein at least one of said first plurality of lens systems is optically coupled with said at least one of said plurality of filaments substantially adjacent to a proximal end region of said fiber optic cable, and at least one of said second plurality of lens systems is optically coupled with said at least one of said plurality of filaments substantially adjacent to a distal end region of said fiber optic cable.

24. (Original) The system of claim 22 wherein at least one of said first plurality of lens systems is optically coupled with said at least one of said plurality of filaments substantially adjacent to a distal end region of said fiber optic cable, and at least one of said second plurality of lens systems is optically coupled with said at least one of said plurality of filaments substantially adjacent to a proximal end region of said fiber optic cable.

25. (Original) The system of claim 22, wherein at least one of said first plurality of lens systems comprises an optical portion of a camera.

26. (Original) The system of claim 22, wherein at least one of said first plurality of lens systems includes an inverted microscope objective, said at least one of said first plurality of lens systems each being optically coupled with said at least one of said plurality of filaments via said inverted microscope objective, said inverted microscope objective each being adapted to produce said substantially-reduced image from an initial image generated by said at least one of said first plurality of lens systems.

27. (Original) The system of claim 26, wherein said substantially-reduced image has a size that is substantially between one-thousandth and one-millionth of a size of said initial image.

28. (Original) The system of claim 22, wherein at least one of said second plurality of lens systems comprises an optical portion of a projector.

29. (Original) The system of claim 22, wherein at least one of said second plurality of lens systems includes a microscope objective, said at least one of said second plurality of lens systems each being optically coupled with said at least one of said plurality of filaments via said microscope objective, said microscope objective each being adapted to produce a restored image from said substantially reduced image.

30. (Original) The system of claim 22, wherein said restored image each has a size that is substantially between one thousand and one million times of a size of said substantially-reduced image.

31. (Currently amended) A method of manufacturing a system for transmitting images over a single filament of a fiber optic cable, comprising the steps of:

optically coupling a first lens system with said single filament, said first lens system being adapted to receive light from an object and to produce a substantially-reduced image of said object; and

optically coupling a second lens system with said single filament, said second lens system being adapted to receive said substantially-reduced image from said first lens system via said single filament, to produce a visibly-presentable image of said object from said substantially-reduced image, and to visibly present said visibly-presentable image.

32. (Original) The method of claim 31, wherein said first step of optically coupling comprises the step of optically coupling said first lens system with said filament via an inverted microscope objective, said inverted microscope objective being adapted to produce said substantially-reduced image from an initial image generated by said first lens system.

33. (Original) The method of claim 31, wherein said first step of optically coupling comprises the step of optically coupling said first lens system with said filament via an optical coupler.

34. (Original) The method of claim 31, wherein said first step of optically coupling comprises the step of optically coupling said first lens system with said filament via a collimating and focusing system.

35. (Original) The method of claim 31, wherein said second step of optically coupling comprises the step of optically coupling said second lens system with said filament via a microscope objective, said microscope objective being adapted to produce a restored image from said substantially-reduced image.

36. (Original) The method of claim 31, wherein said second step of optically coupling comprises the step of optically coupling said second lens system with said filament via an optical coupler.

37. (Original) The method of claim 31, wherein said second step of optically coupling comprises the step of optically coupling said second lens system with said filament via a collimating and focusing system.

38. (Currently amended) A method for transmitting images over a single filament of a fiber optic cable, comprising ~~the steps of~~:

producing a substantially-reduced image of an object via a first lens system;

communicating said substantially-reduced image from said first lens system to a second lens system via said single filament; and

generating a visibly-presentable image from said substantially-reduced image via said second lens system.

39. (Original) The method of claim 38, wherein said step of producing comprises the steps of generating an initial image of said object via said first lens system and producing said substantially-reduced image from said initial image via an inverted microscope objective, said inverted microscope objective optically coupling said first lens system with said filament.

40. (Original) The method of claim 39, wherein said step of producing said substantially-reduced image from said initial image via an inverted microscope objective comprises the step of generating said substantially-reduced image with a size that is substantially between one-thousandth and one-millionth of a size of said initial image.

41. (Original) The method of claim 38, wherein said step of communicating includes the step of collimating and focusing said substantially-reduced image.

42. (Original) The method of claim 38, wherein said step of generating comprises the steps of generating a restored image from said substantially-reduced image via a microscope objective and producing said visibly-presentable image from said restored image via said second lens system, said microscope objective optically coupling said filament with said second lens system.

43. (Original) The method of claim 42, wherein said step of producing comprises the step of generating said restored image with a size that is substantially between one thousand and one million times a size of said substantially-reduced image.

44. (Original) The method of claim 38, wherein said step of producing includes the step of visibly presenting said visibly-presentable image.

45. (Original) The method of claim 44, wherein the step of visibly presenting comprises the step of projecting said visibly-presentable image on a viewing screen.

46. (Original) The method of claim 44, wherein the step of visibly presenting comprises the step of visibly presenting said visibly-presentably image substantially adjacent to an image surface of said second lens system.